

## CERTIFICATE

The attachment of this certificate is a copy of the following patent application submitted to this office:

Filing date: 2002 10 18

Application No.: 02 2 48824.3

Type of invention: Utility Model

Title of the invention: A Wristwatch Capable of Storing and Transmitting Data

Applicant: Zhuhai Xonix Electronic Watch Company Limited

Inventor(s) or Designer(s): CHEN Leo

Director of the State Intellectual Property Office

of the People's Republic of China: WANG Jing-chuan

July 16, 2003

## **A Wristwatch Capable of Storing and Transmitting Data**

### **Technical Field**

This utility model relates to a wristwatch, and in particular, to a wristwatch with a USB connector.

### **Background of the Utility Model**

To meet the desire of data exchange, various types of mobile memory devices are present in the market, such as mobile hard disks, portable memory devices with USB connectors, etc.. Data exchange can be realized between computers by utilizing these products. For example, data from one computer is downloaded and stored to a portable memory device with USB connector quickly, and then the data in the memory device is transmitted to another computer through the USB connector. Generally, the data stored in these products with Flash Memory can be downloaded rapidly and stored for a long time, for some instance, more than ten years. However, the mobile hard disk is not portable, and the existing portable memory device with a USB connector has to be equipped with a long cable, which connects with the USB connector of the product on its one end, and with the USB port of the computer on the other end. It often causes a lot of inconvenience since a consumer has to always carry the cable with him, and data transmission and storage becomes impossible if the cable is lost. Therefore, it is desirable to develop a portable memory device integrated with daily commodity like a wristwatch, so that the USB product needs not to be carried additionally. As a timing product, the wristwatch is popular, and particularly, when it has some new functions. Hence, a wristwatch capable of storing and transmitting data must be a brand new option for consumers in the domestic and foreign markets, and it will provide utmost convenience for information exchange and communication in the modern society.

### **Summary of the Utility Model**

The main object of the present utility model is to provide an improved wristwatch capable of storing and transmitting data rapidly.

The above object of the present utility model is achieved by the following technical scheme. A wristwatch according to the present utility model comprises a CPU and a Flash Memory which are installed inside the watch case and a USB connector and a USB four-core cable which are installed on the watch band. All these parts are electrically connected via corresponding circuits. One end of said four-core cable is connected with said USB connector, the other end is connected with said CPU, Flash Memory and the circuits thereof. Said USB connector is used to connect with the USB port of a computer, so as to ensure said CPU and said Flash Memory in

their working status, thereby, said Flash Memory can be used to load and save data from the hard disk of a computer or transmit these data to another computer and store the data in its hard disk. In addition, there is a groove in the watch band, and there is a loop to protect said USB connector. Furthermore, when the wristwatch is not used for data storing and transmitting, said USB four-core cable and said USB connector will be beset inside the groove of the watch band, with the loop wrapped around the USB connector, so as to avoid the damage to the USB four-core cable and the USB connector even when the wearer of the wristwatch is doing sports. When the wristwatch is used for data storing and transmitting, the steps are as follows: move the loop to another position of the watch band; then take out the USB four-core cable and the USB connector from the groove of the watch band, and plug the USB connector into the corresponding USB port of a computer. The copying, downloading, storing and transmitting of data can be completed for an instant.

The advantages of the present utility model are as follows: since a Flash Memory device is integrated in the wristwatch, the wristwatch can be used to exchange, transmit and store data of computers rapidly at any time and any place, in addition to indicating time. Since the CPU and the Flash Memory are both installed inside the watch case, the volume and weight of the present utility model is similar to those of the traditional one, so that, the wristwatch of the present utility model is still convenient for carrying and using. Further more, since grooves and a loop are provided on the watch band, the connection cable and the USB connector are not exposed outside, so that consumers will not feel any inconvenience when the wristwatch are carried and worn. Thus, consumers may possess a wristwatch capable of transmitting and storing data of computers, without carrying a memory device or a mobile hard disk additionally.

#### Brief Description of the Drawings

Fig. 1 is the principle circuit diagram of a wristwatch capable of storing and transmitting data according to the present utility model;

Fig. 2 is the front view of the wristwatch according to the present utility model when the USB connector is wrapped with a loop;

Fig. 3 is the front view of the wristwatch according to the present utility model when the loop is moved to another position on the watch band;

Fig. 4 is the schematic view of a wristwatch capable of storing and transmitting data according to the present utility model, with the USB four-core cable and the USB connector taken out of the groove of the watch band after the loop is moved.

#### Detailed Description of the Preferred Embodiments

The present utility model will now be described in details by way of examples with reference to the accompanying drawings.

As shown in Fig. 1, the wristwatch according to the present utility model comprises: a CPU 1 and a Flash Memory 2, a USB four-core cable 3 and a USB

connector 4. All these parts are electrically connected via corresponding circuits.

As shown in Fig. 2, the CPU 1 and the Flash Memory 2 shown in Fig. 1 are installed inside the watch case 5, the USB four-core cable 3 and the USB connector 4 are installed on the watch band 6. A groove 61 is provided on the watch band 6 to house the USB four-core cable 3 and the USB connector 4. A loop 62 is also provided to wrap the USB four-core cable 3 for protection purpose.

As shown in Fig. 3, the loop 62 is moved to another position on the watch band 6, while the USB connector 4 and the USB four-core cable 3 are still beset inside the groove 61.

As shown in Fig. 4, after the loop 62 is moved to another position on the watch band, the USB connector 4 and the USB four-core cable 3 can be taken out from the groove, and then, connect the USB connector 4 to the corresponding port of a computer, thus, data transmitting and loading can be realized between the computer and the wristwatch of the present utility model.

The present utility model will now be described in further details with reference to Fig. 1, Fig. 2, Fig. 3 and Fig. 4. In addition to the technical features mentioned above, the loop 62 is designed to fit the size of the USB connector 4. Several small pieces of projections are provided on both sides of the groove 61, so as to clamp the USB four-core cable 3 and the USB connector 4 reset inside the groove 61. When it is necessary to transmit or load data from a computer, the USB four-core cable 3 and the USB connector 4 can get rid of the small projections mentioned above. When the wristwatch of the present utility model is used for data storing and transmitting, move the loop 62 to another position on the watch band 6 first, then take the USB four-core cable 3 and the USB connector 4 out from the groove 61, and plug the USB connector 4 into the corresponding USB port of a computer. When the above steps are finished, the required data such as, material, files and information, etc, can be copied and downloaded rapidly from the computer to the Flash Memory 2 by operations on the computer. All of the operations of copying, downloading, storage and transmission are completed under the control of CPU 1. CPU 1, Flash Memory 2, USB four-core cable 3 and USB connector 4 can be chosen from the standard units, or they can be custom made according to special specs, so that they may be fit in the watch case 5 easily. In addition, as shown in Fig.2, the USB four-core cable 3 extends from the seam 63 between the watch case 5 and the watch band 6, pastern may be used in the clearance of the seam 63 for sealing, so that the CPU 1, Flash Memory 2, the corresponded circuit and other elements in the watch case 5 can be protected. Therefore, the wristwatch is watertight and moisture-resistant. Specially, the wristwatch according to the present utility model should be made of plastic. The material of watch case or watch band is ABS. The superduper insulating property of the ABS ensures the electric property of the wristwatch of the present utility model, so that mistakes can be avoided when data is loaded and transmitted through the CPU 1 and Flash Memory 2. Thus, the wristwatch of present utility model, which integrates the traditional wristwatch with a USB Flash Memory device, possesses functions of rapid data transmission and storage in addition to the timing function. The wristwatch of the present utility model has more functions than the traditional one, and is more

convenient than an individual external hard disk or the existing portable storage product.

## Claims

What is claimed is:

1. A wristwatch capable of storing and transmitting data comprises a watch case (5) and a watch band (6), characterized in that, said wristwatch further comprises a CPU (1) and a Flash Memory (2) which are installed inside the watch case (5) and a USB four-core cable (3) and a USB connector (4) which are installed on the watch band (6).

2. A wristwatch capable of storing and transmitting data according to claim 1, characterized in that, said CPU (1), Flash Memory (2), USB four-core cable (3) and USB connector (4) are electrically connected via corresponding circuits.

3. A wristwatch capable of storing and transmitting data according to claim 1, characterized in that, one end of said four-core cable (3) is connected with said USB connector (4), the other end is connected with said CPU (1) and Flash Memory (2).

4. A wristwatch capable of storing and transmitting data according to claim 1, characterized in that, a groove (61) is provided on the watch band (6) to house the USB four-core cable (3) and the USB connector (4).

5. A wristwatch capable of storing and transmitting data according to claim 1, characterized in that, a loop (62) is provided to wrap the USB connector (4) when it is not necessary to load or transmit data, and when the wristwatch is being used for storing and transmitting data, the loop (62) is moved to another position on the watch band (6), so that, the USB connector (4) can be taken out from the groove (61).

6. A wristwatch capable of storing and transmitting data according to claim 1, characterized in that, data storing and transmitting can be realized by taking the USB four-core cable (3) and the USB connector (4) out from the groove (61), and then connecting the USB connector (4) to the USB port of a computer.

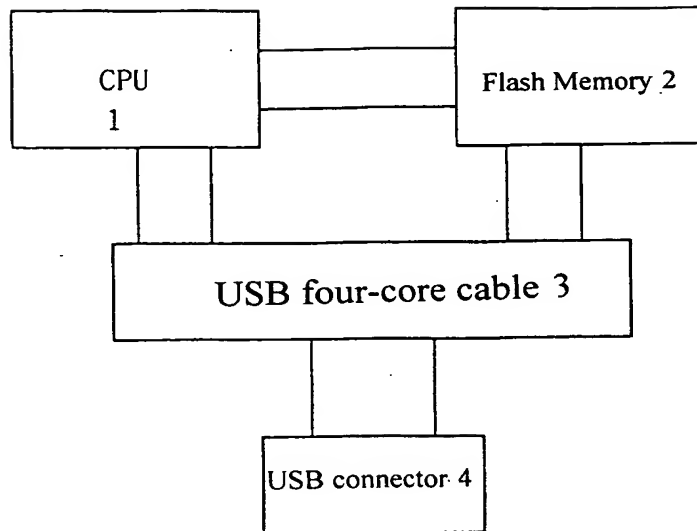


Fig 1

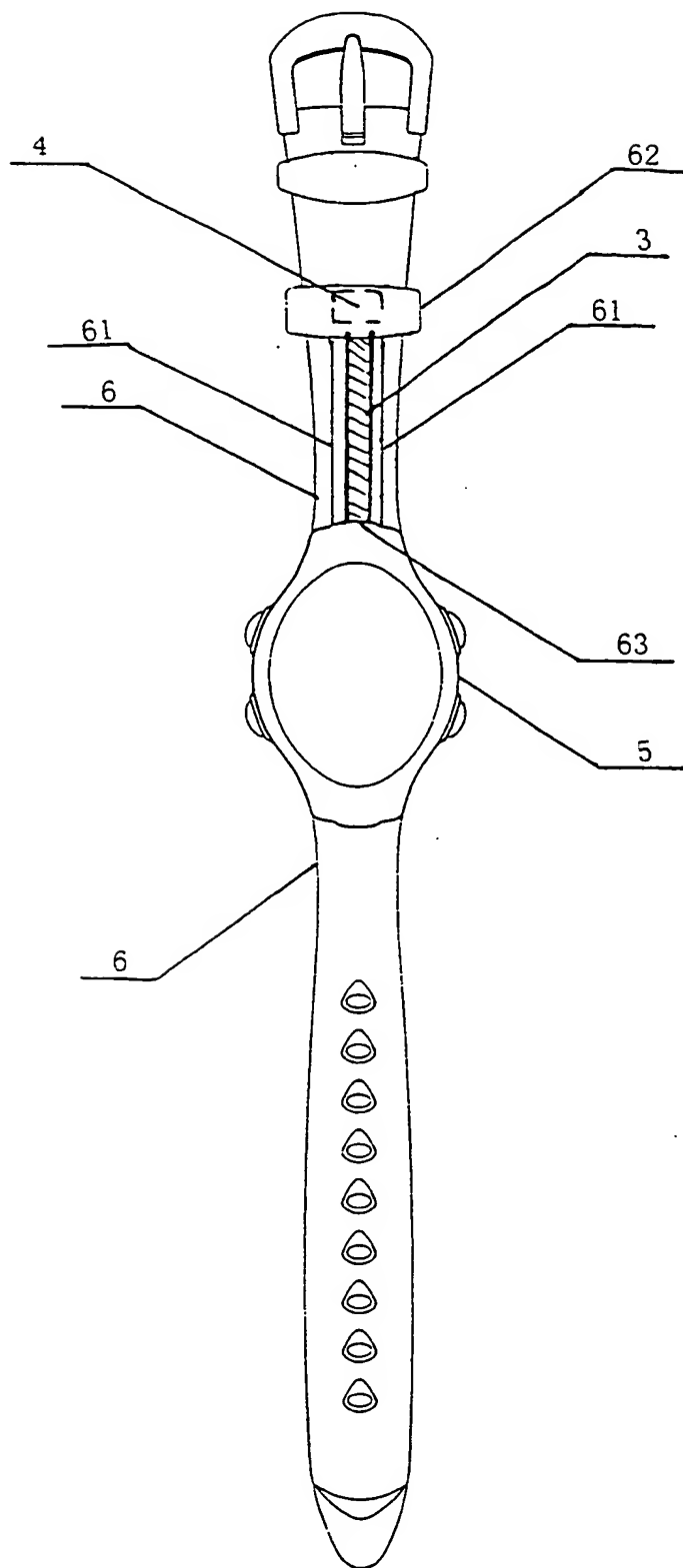


Fig 2

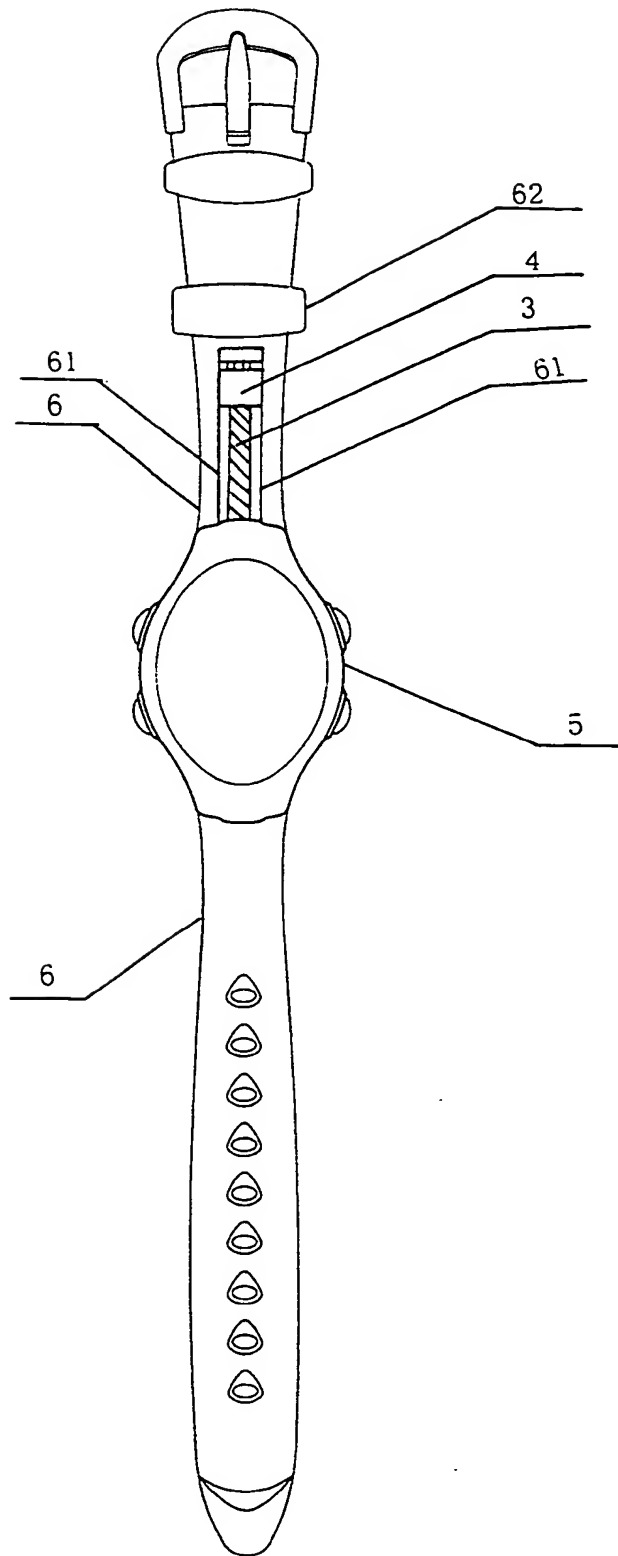


Fig 3



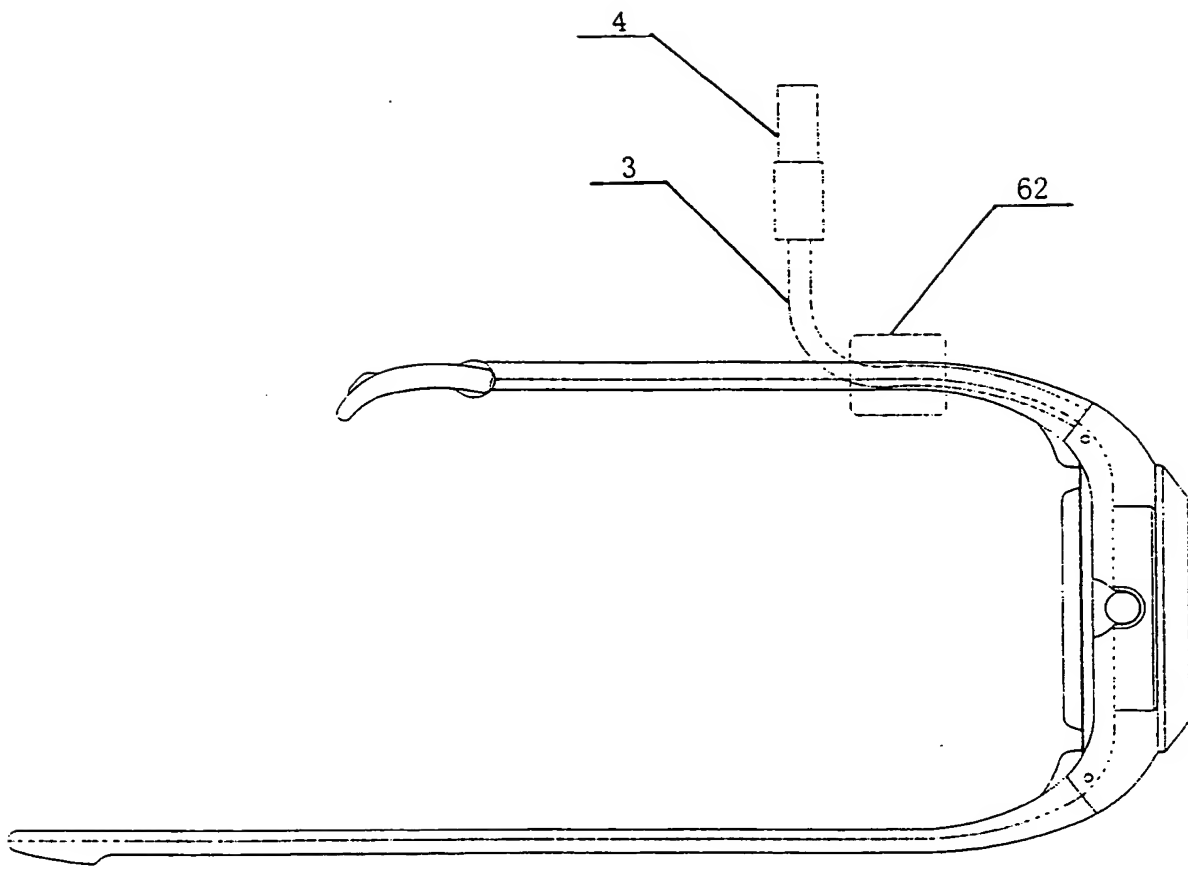


Fig 4

# 证 明

本证明之附件是向本局提交的下列专利申请副本

申 请 日： 2002 10 18

申 请 号： 02 2 48824.3

申 请 类 别： 实用新型

发明创造名称： 可存储及传输数据的手表

申 请 人： 珠海精准表业有限公司

发明人或设计人： 陈笠

中华人民共和国  
国家知识产权局局长

王景川

2003 年 7 月 16 日

# 权利要求书

---

1. 一种可存储及传输数据的手表，包括表壳（5）、表带（6），其特征在于：还包括安装在表壳（5）里面的 CPU（1）和快闪存储器（2）、安装在表带（6）上的 USB 四芯线（3）和 USB 接口（4）。

2. 根据权利要求 1 所述的可存储及传输数据的手表，其特征在于：CPU（1）、快闪存储器（2）、USB 四芯线（3）、USB 接口（4）以相应的电路相连接。

3. 根据权利要求 1 所述的可存储及传输数据的手表，其特征在于：USB 四芯线（3）一端连接 USB 接口（4），另一端连接 CPU（1）及快闪存储器（2），

4. 根据权利要求 1 所述的可存储及传输数据的手表，其特征在于：表带（6）开有凹槽（61），用来嵌套住 USB 四芯线（3）及 USB 接口（4）。

5. 根据权利要求 1 所述的可存储及传输数据的手表，其特征在于：表带（6）套有束环（62），以在不进行数据传输及存储的时候包裹住 USB 接口（4），并在进行数据传输及存储的时候移动至表带（6）其它位置，使 USB 接口（4）能从凹槽（61）中取出。

6. 根据权利要求 1 所述的可存储及传输数据的手表，其特征在于：将 USB 四芯线（3）及 USB 接口（4）从凹槽（61）取出，并将 USB 接口（4）插接在计算机的相应 USB 接口上，即可实现数据的存储及传输。

## 说明书

### 可存储及传输数据的手表

#### 技术领域

本实用新型涉及一种手表，特别是一种带有 USB 接口的手表。

#### 背景技术

由于数据交换的需要，市场上出现了各种移动存储设备，如移动硬盘、具有 USB 接口的便携式存储产品等。使用这些产品，可实现计算机与计算机之间的数据交换，如将一台计算机的数据迅速存储在具有 USB 接口的便携式存储产品中，然后再应用该产品将这些数据传输给另一台计算机。该产品一般具有快闪存储器（Flash Memory），所以存储速度很快、数据保存时间也长，如某些快闪存储器可以保存数据十年以上。但是，移动硬盘携带起来极不方便，而市场已有的具有 USB 接口的便携式存储产品在使用的时候，都要通过一根长长的导通线（一端连接该产品的 USB 接口，另一端连接计算机的 USB 接口）来连接该产品和计算机。消费者需要经常地携带一根导通线，使用起来相当不方便，如果不慎将导通线丢失，数据传输及存储成为不可能。而且，为了随时可以进行数据闪存和交换，消费者需要专门地携带该产品。因此，消费者迫切需要一种能与日常用品（如手表）相统一的便携式存储产品，这样就无需专门地携带一个单独的 USB 产品。而手表作为一种计时产品，深受消费者的喜爱。特别是对一些具有新功能的手表，尤其受到市场的青睐。所以，如果出现一种可利用作数据存储、传送的手表，必定为国内外市场提供一种全新的选择，且为现代社会的信息交流、交换带来最大的便利。

#### 实用新型的内容

本实用新型的目的在于，提供一种经过改良的、可迅速地存储和传输数据的手表。

本实用新型的目的是通过以下技术方案实现的：本实用新型提供的手表包括安装在表壳里面的 CPU、快闪存储器（Flash Memory）及安装在表带上的 USB 接口、USB 四芯线。这些部分都通过相应的电路相连接。所述 USB 四芯线一端连接所述 USB 接口，另一端连接安装在表壳里面的所述 CPU 与所述快闪存储器以及相应的电路。所述 USB 接口用于连接计算机的 USB 接口，以使所述 CPU 及所述快闪存储器处于工作状态，所述快闪存储器因而可以存储计算机硬盘的数据或将这些所存储的数据传输给另一台计算机，以存储在该另一台计算机的硬盘中。另外，表带开有凹槽，并具有用于保护所述 USB 接口的束环。进一步地说，在不进行数据传输及存储的时候，所述 USB 四芯线

及所述 USB 接口内嵌于表带的凹槽内，该束环包裹住 USB 接口，如此能避免手表佩戴者在运动等情形下损坏 USB 芯线及 USB 接口。在进行数据传输及存储的时候，该束环移动至表带其他位置，同时所述 USB 四芯线与所述 USB 接口可从表带凹槽取出，手表的所述 USB 接口连接某台计算机的时候，即可以从该台计算机复制及存储数据，或将其已经存储的数据传送给该台计算机。数据的复制、存储或传送可于瞬间完成。

本实用新型的优点在于：手表内置有快闪存储装置，所以它除了提供传统手表的计时等功能之外，还可以随时随地、迅速地与计算机进行数据交换、传送和存储。由于 CPU、快闪存储器均内置于手表表壳之内，所以该手表在体积、重量等方面与传统手表无明显差别，因而仍然便于携带和使用。表带上设置有凹槽及束环，USB 四芯线及 USB 接口并不外露，因而不会给消费者的携带或佩戴带来不便。如此，消费者可以拥有一种具崭新功能的手表，同时可以十分方便地传输和存储计算机内的数据，而无需专门携带一个单独的存储装置或移动硬盘，也无需专门携带有关导通线。

#### 附图说明

图 1 是本实用新型的原理示意图。

图 2 是本实用新型束环套住 USB 接口时的正面结构示意图。

图 3 是本实用新型束环移至表带其它位置的正面结构示意图。

图 4 是本实用新型束环移动后、从表带凹槽取出 USB 四芯线及 USB 接口时的示意图。

#### 具体实施方式

下面结合附图和具体实施方式对本实用新型作进一步的详细描述。

如图 1 所示，本实用新型具有 CPU1、快闪存储器 2、USB 四芯线 3、USB 接口 4，都通过相应的电路相连接。

如图 2 所示，图 1 所述 CPU1 及快闪存储器 2 安装在表壳 5 里面，USB 四芯线 3 及 USB 接口 4 则安装于表带 6，表带 6 开有用于放置 USB 四芯线 3 及 USB 接口 4 的凹槽 61，并有束环 62，束环 62 用来套住 USB 四芯线 3，达到保护的目的。

如图 3 所示，束环 62 移动至表带 6 其它位置，USB 接口 4 及 USB 四芯线 3 仍藏在凹槽 61 内。

如图 4 所示，束环 62 移动至表带其它位置后，USB 接口 4 及 USB 四芯线 3 从表带的凹槽取出，此时可将 USB 接口 4 连接在计算机的相应 USB 接口上，即可实现本实用新型与计算机的数据传输与存储。

现在结合图 1、图 2、图 3 及图 4 对更进一步的说明。除了以上描述的技术以外，更进一步地说，束环 62 规格及尺寸大小以能恰好紧紧地套住 USB 接口 4 为宜。另外，最好在表带凹槽 61 的两侧边提供若干小突块，以卡住藏在凹槽 61 内的 USB 四芯线 3、

USB 接口 4。在需要与计算机进行数据传送或存储时，USB 四芯线 3 及 USB 接口 4 能摆脱上述小突块的卡锁。在使用本实用新型手表与计算机进行存储或传输数据时，先将束环 62 移至表带 6 的其它位置，然后将 USB 四芯线 3 及 USB 接口 4 从凹槽 61 中取出，将 USB 接口 4 插接在计算机的相应 USB 接口中，在计算机上进行相应的操作就可以快速地将计算机存储的有关资料、档案、信息等数据复制下载至快闪存储器 2。复制、下载、存储、传输的程式都由 CPU1 控制完成。CPU1、快闪存储器 2、USB 四芯线 3、USB 接口 4 可以使用市场已有标准件，也可以向有关供应商订做特定规格，以使它们更容易地安装在表壳 5 内。另外，如图 2 所示，USB 四芯线 3 从表壳 5 与表带 6 的衔接处 63 伸出，衔接处 63 的间隙可以使用密封胶，从而保护表壳内的 CPU1、快闪存储器 2 及相应电路以及手表的其他内置于表壳 5 的零部件，这样可以更好地保障防水、防潮等性能。尤其是，本实用新型手表可以是塑胶手表，其表壳或表带使用工程塑料（ABS），此 ABS 材料绝缘性能极佳，因而可以保障本实用新型手表的电气性能，使 CPU1 及快闪存储器 2 的数据存储或传输工作不会出错。这样，本实用新型在现有手表的基础上，将 USB 快闪存储装置安装在手表内，在向消费者提供一种计时产品的同时，也提供了一种携带及使用、保管起来特别方便而且存储速度极快的数据传输及存储产品。如此将比仅仅佩戴一个手表更加实用，也比另外携带一个单独的外置硬盘或现有便携式存储产品更加方便、有利。

说明书附图

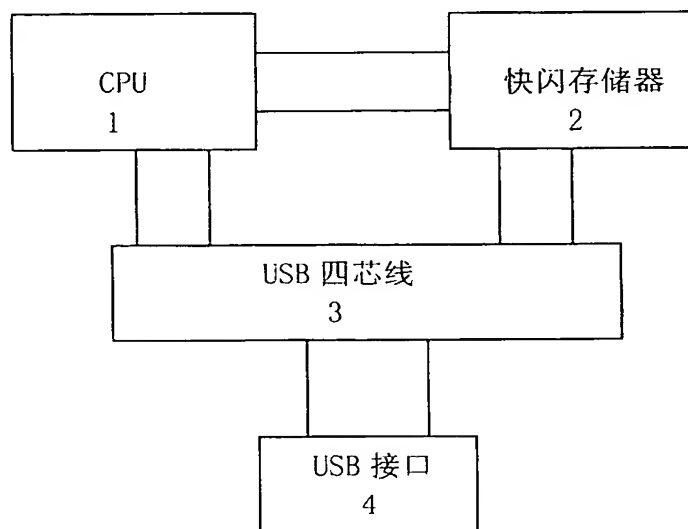


图 1

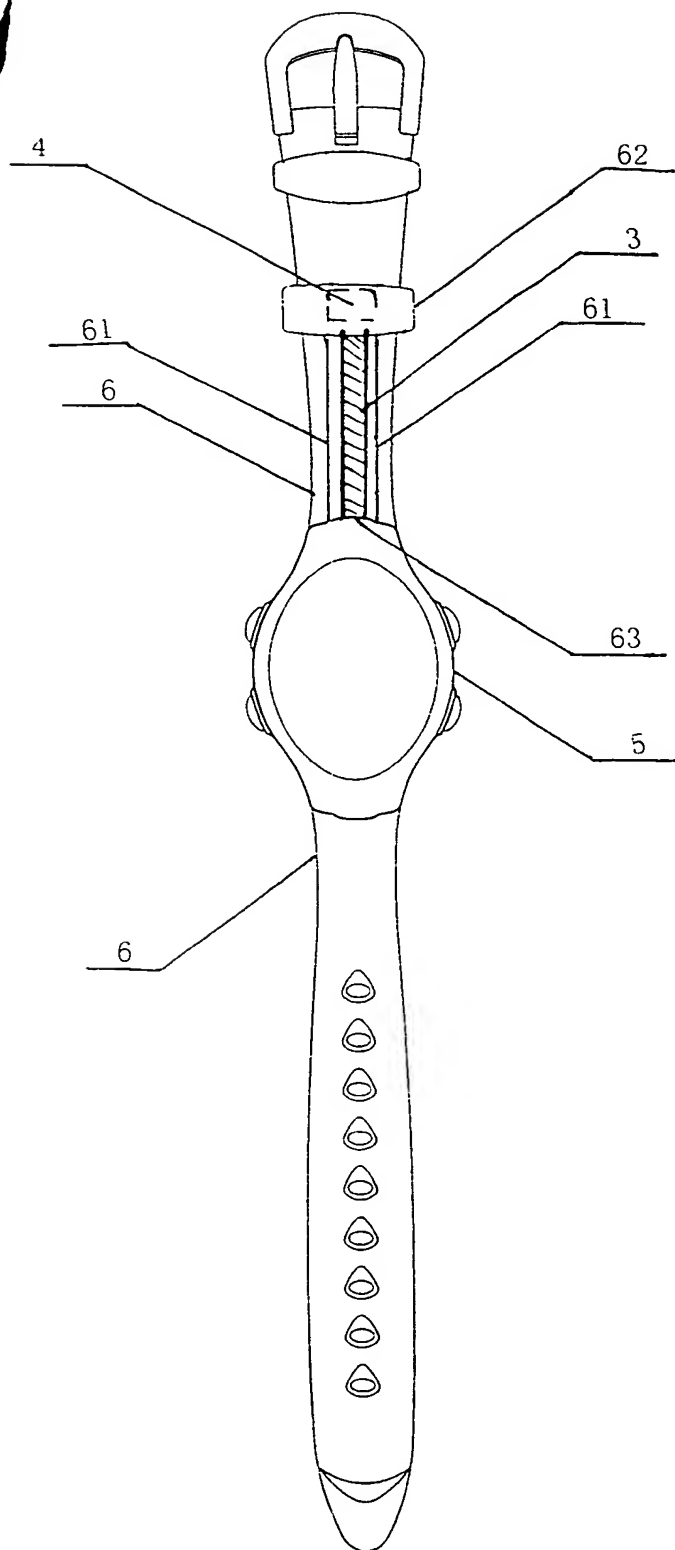


图 2



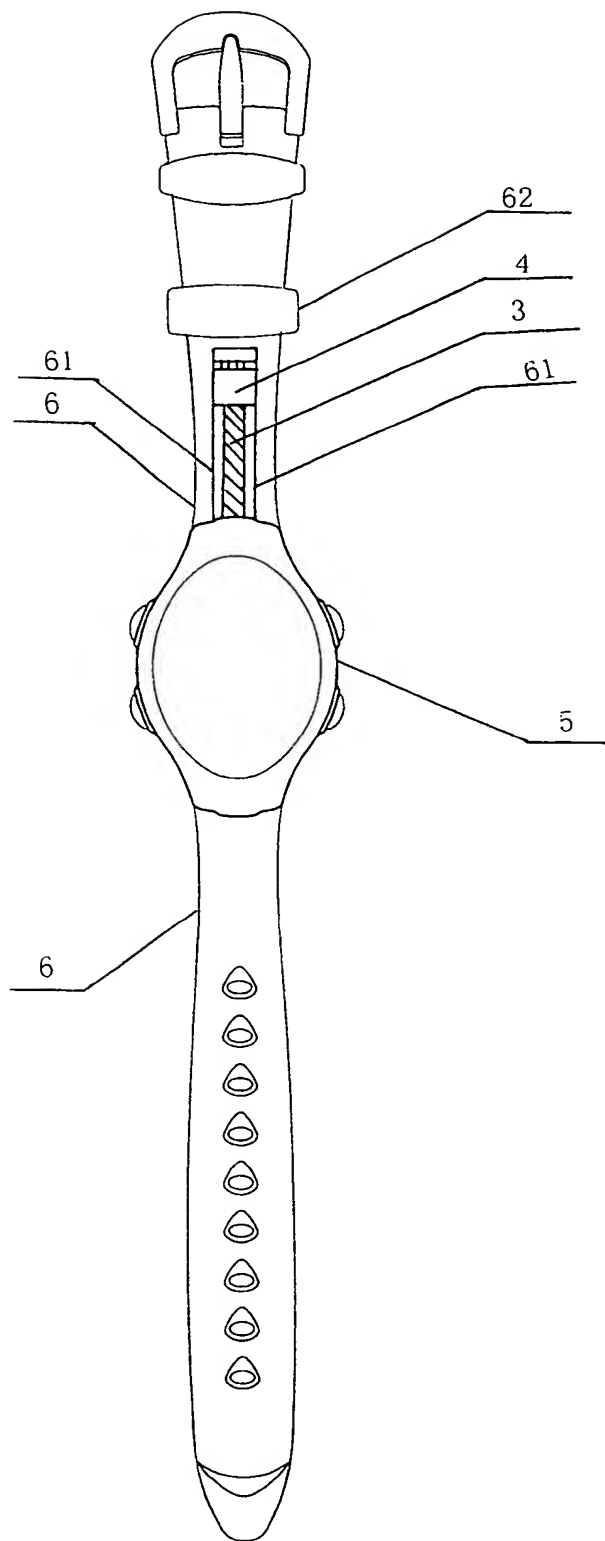


图 3

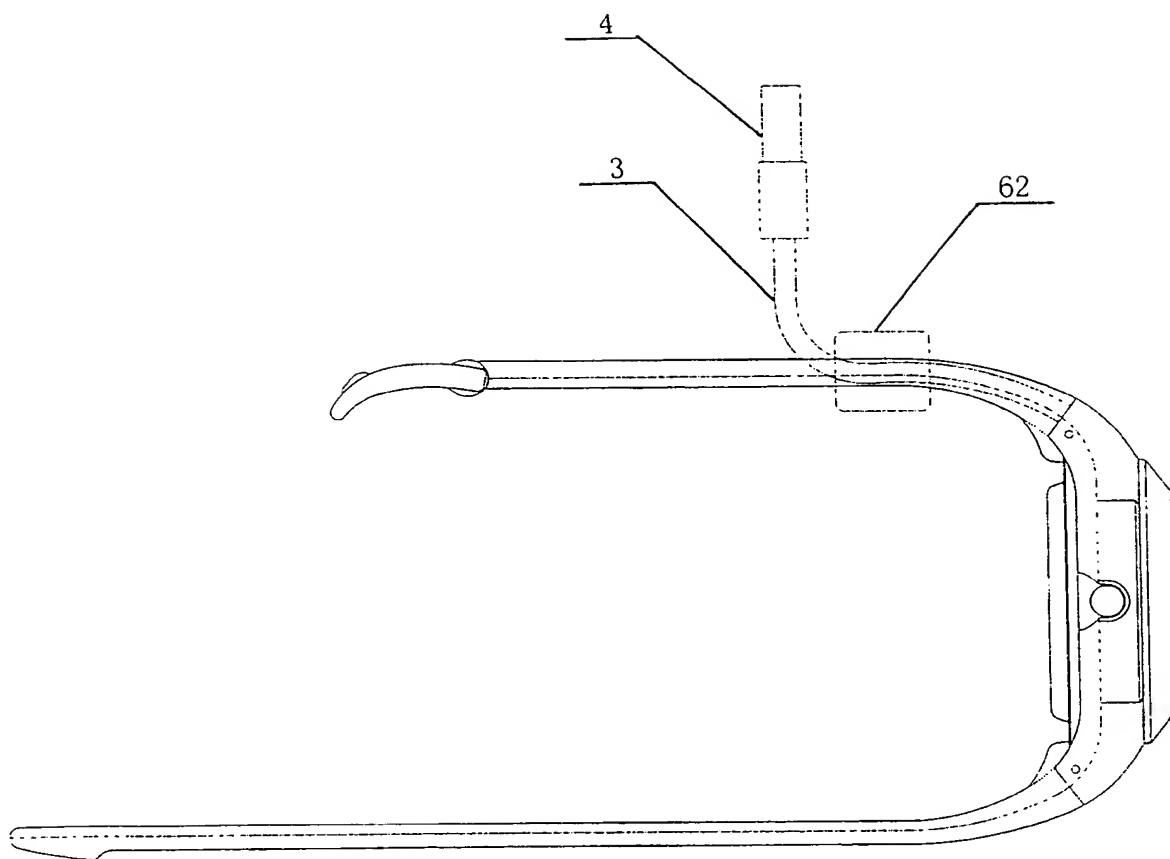


图 4